**IN THE SPECIFICATION**

Please substitute the following amended paragraphs for the corresponding original paragraphs. A marked copy of the paragraph amendments is attached hereto.

One page 8, second full paragraph:

An energized gas or plasma is generated from the process gas by a gas energizer 46 that couples electromagnetic energy, such as RF or microwave energy, to the process gas in the process zone 30 of the chamber 28, such as for example, an inductor antenna 48 comprising one or more coils powered by an antenna power supply 50 that inductively couples RF energy to process gas in the chamber 28. In addition or as an alternative chamber design, a first process electrode 51 such as an electrically grounded sidewall or ceiling of the chamber 28 and a second electrode 52 such as an electrically conducting portion of the support 32 below the substrate 24 may be used to further energize the gas in the chamber 28. The first and second electrodes 51, 52 are electrically biased relative to one another by an RF voltage provided by an electrode voltage supply 54. The frequency of the RF voltage applied to the inductor antenna 48 and/or to the electrodes 51, 52 is typically from about 50 KHz to about 60 MHz.

In the paragraph bridging pages 8 and 9:

The chamber 28 further comprises a process monitoring system 56 to monitor the process being performed on the substrate 24. The process monitoring system 56 may monitor, for example, an emission from a plasma generated inside the chamber 28, the plasma emission being generally multispectral, i.e., providing radiation having multiple wavelengths extending across a spectrum. In addition, quartz crystal microbalance (QCM) 58 may be used to determine the amount of etchant residue deposited on chamber surface during the etching process. Generally, the microbalance 58 is a piezoelectric plate that

changes capacitance when etchant residue is deposited on the plate. The microbalance 58 is mounted on an internal surface in the chamber 28, such as a chamber sidewall, and connected to a QCM computer 60 outside the chamber 28.

In the paragraph bridging pages 11 and 12:

The process sequencer program 134 comprises program code to accept the chamber type and set of process parameters from the process selector program 132 and to control operation of the chamber 28. The sequencer program 134 initiates execution of the process set by passing the particular process parameters to a chamber manager program 136 that controls multiple processing tasks in a chamber 28 and typically includes a process chamber program 124 and a process monitoring program 126. The process chamber program 124 includes program code to set the timing, gas composition, gas flow rates, chamber pressure, chamber temperature, RF power levels, support position, heater temperature, and other parameters of a particular process. Typically, the process chamber program 124 includes a substrate positioning program 138, a gas flow control program 140, a gas pressure control program 142, a gas energizer control program 144, and a substrate temperature control program 146. Typically, the substrate positioning program 138 comprises program code for controlling chamber components that are used to load the substrate 24 onto the support 32 and optionally, to lift the substrate 24 to a desired height in the chamber 28 to control the spacing between the substrate 24 and the gas outlets 38 of the gas delivery system 34. The gas flow control program 140 has program code for controlling the flow rates of different constituents of the process gas. The gas flow control program 140 may also control the open/close position of the safety shut-off valves, and ramp up/down the gas flow controller 40 to obtain the desired gas flow rate. For example, the gas flow control program 140 may be used to set the flow rates of the different gases or to exclude particular gases from the gas composition. The pressure control program 142 comprises program code for controlling the pressure in the chamber 28 by regulating the aperture size of the throttle valve 44 in the exhaust system 42. The gas energizer control

program 144 comprises program code for setting low and high-frequency RF power levels applied to the process electrodes 51, 52. Optionally, the substrate temperature control program 146 comprises program code for controlling the temperature of a heater element (not shown) used to heat the support 32 and substrate 24; or the flow rate and temperature of fluid circulated through the support 32.

On page 12, first full paragraph:

The process monitoring program 126 comprises program code that obtains sample or reference signals from the chamber 28 and processes the signal according to preprogrammed criteria. The program 126 may also send instructions to the chamber manager program 136 or other programs to change the process conditions or other chamber settings. For example, the process monitoring program 126 may comprise program code to analyze an incoming signal trace provided by the process monitoring system 56 and determine a process endpoint or completion of a process stage when a desired set of criteria is reached, such as when an attribute of the detected signal is substantially similar to a pre-programmed value. The process monitoring program 126 may also be used to detect a property of a material being processed on the substrate 24, such as a thickness, or other properties, for example, the crystalline nature, microstructure, porosity, electrical, chemical and compositional characteristics of the material on the substrate 24. Upon detecting an onset or completion of a process, the process monitoring program signals the process chamber program 126 which sends instructions to the controller 100 to change a process condition in a chamber 28 in which the substrate 24 is being processed. The controller 100 is adapted to control one or more of the gas delivery system 34, plasma generator 46, or throttle valve 44 to change a process condition in the chamber 28 in relation to the received signal.

In the paragraph bridging pages 12 and 13:

Referring to Figure 1, the data signals received by and/or evaluated by the controller 100 may also be sent to a factory automation host computer 300. The factory automation host computer 300 may comprise a host software program 302 that evaluates data from several platforms or chambers 28, and for batches of substrates 24 or over an extended period of time, to identify statistical process control parameters of (i) the processes conducted on the substrates 24, (ii) a property that may vary in a statistical relationship across a single substrate 24, or (iii) a property that may vary in a statistical relationship across a batch of substrates 24. The host software program 302 may also use the data for ongoing in-situ process evaluations or for the control of other process parameters. A suitable host software program comprises a WORKSTREAM™ software program available from aforementioned Applied Materials. The factory automation host computer 300 may be further adapted to provide instruction signals to (i) remove particular substrates 24 from the processing sequence, for example, if a substrate property is inadequate or does not fall within a statistically determined range of values, or if a process parameter deviates from an acceptable range; (ii) end processing in a particular chamber 28, or (iii) adjust process conditions upon a determination of an unsuitable property of the substrate 24 or process parameter. The factory automation host computer 300 may also provide the instruction signal at the beginning or end of processing of the substrate 24 in response to evaluation of the data by the host software program 302.

In the paragraph bridging pages 15 and 16:

Table III shows the polysilicon etch rate and the etch rate uniformity for examples 5 to 17 for etching blanket undoped polysilicon on a silicon substrate in a DPS chamber. The process variables included gas pressure (4, 12 or 20 mTorr), source power (600 or 800 watts), bias power (70 or 100 watts), $CF_4$ flow rate (50 or 100 sccm), and $Cl_2$

flow rate (0, 10, 20, 40 or 100 sccm). It is seen that the optimal etch rate and uniformity was at about 10:1 to 3:1 volumetric flow ratio of $CF_4$ to chlorine.

In the paragraph bridging pages 16 and 17:

As shown in Figure 4, the addition of a $Cl_2$ to a $CF_4$ based gas chemistry that is absent HBr had a significant effect on the polysilicon etch rate and uniformity. The bars represent the etch rate uniformity and the line represents the etch rate. This figure plots the results of examples 12 to 15, in which the source power was held at 600 watts, the bias power at 100 watts, and the helium backside gas pressure maintained at 12 Torr. Adding 20 sccm of $Cl_2$ (in 100 sccm of $CF_4$) increased the polysilicon etch rate nearly 70%, and improved uniformity from greater than 5 (1δ) to less than 2 (1δ). However, further increasing the $Cl_2$ flow to 40 sccm did not change the etch rate but degraded etch rate uniformity back to about 5 to 6. These results indicate that a balanced $CF_4$ to $Cl_2$ ratio provides both high etch rates as well as good etching uniformity. The optimal gas ratio also depends on the gas composition. Good etch rate uniformity can be obtained with $CF_4/Cl_2$ gas ratio ranging from 1:1 to 5:1 at 4mTorr, while the gas ratio was limited to around 5:1 at a higher pressure of 12mTorr. At higher gas pressure, source power became a dominating factor in uniformity control, with improved uniformity at a high source power.

On page 18, Table V:

**Table V**

| Pressure (mTorr) | Source power (watts) | Bias power (watts) | $CF_4$ (sccm) | $Cl_2$ (sccm) | $N_2$ (sccm) | Backside He Pressure (Torr) | Cathod temp. °C | Wall temp. °C | Dome temp. °C |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 450 | 70 | 100 | 20 | 30 | 8 | 50 | 80 | 80 |